

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

03917 U.S. PTO  
10/695541  
102803

Applicant: Donald E. Burg

Title: RETRACTABLE FULL HEIGHT COVER FOR VEHICLES

Attorney Docket No: 104-148

Filing Date: October 28, 2003

NOTICE OF FILING INFORMAL DRAWINGS

The Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Notice is herewith given of the filing of informal drawings with the above-identified application. Applicant will furnish drawings in accordance with the Rules of Practice and MPEP no later than the time for response specified upon receipt of advice from the Patent and Trademark Office of allowance of any one or more claims now or hereafter submitted in the present application.

Respectfully submitted,

Date: October 28, 2003

  
DONALD E. BURG, Applicant Inventor

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# RETRACTABLE FULL HEIGHT COVER FOR VEHICLES

## RELATED U.S. APPLICATION DATA

This application is a continuation-in-part of United States Serial Number 10/673,948 filed on September 29, 2003.

## BACKGROUND OF THE INVENTION

The prior art offers two types of covers for vehicle cargo beds such as pickup truck cargo beds. The first type are commonly known as cargo bed or tonneau covers and fit substantially even with the top of a pickup truck's cargo bed. They come in either soft fabric, normally a coated canvas type material, or hard structure, generally a fiberglass or other rigid material. The hard structure cargo bed covers, in their most popular arrangement, tilt upward from where they are attached to the front end of the cargo bed or are made from one or more pieces and are removable for when hauling cargo that is higher than the sides of the cargo bed. Another version is made from a number of attached pieces that can be retracted into a storage compartment at the front of the cargo bed to thereby get it out of the way when hauling cargo higher than the cargo bed sides. All of these suffer a serious limitation in that they cannot be used when hauling cargo higher than the sides of the cargo bed unless they are tilted up, removed, or retracted. In all cases, hauling the higher cargo exposes such cargo to weather and wind damage.

The second type is most commonly known as the camper top or topper. These are full cab height and extend from the cab, or passenger cab as sometimes known, to the tailgate. They provide a full cab height weather proof compartment and, while removable with some effort required to unbolt and store the unit, are generally

permanently installed. The most common construction for these topper units is from fiberglass so as to provide the necessary rigid structure.

There is also a full time cargo bed cover as it were on Sport Utility Vehicles (SUV's) where there is a non-retractable full height cover that extends to the rear of the vehicle. There is a tailgate or aft gate on such vehicles that opens to allow insertion or removal of cargo from the back permanently covered part of the vehicle. There is also a new SUV vehicle offered by General Motors that has a forwardly sliding top section. This latter concept still has side and frames and windows that are permanent. The only purpose is to give a vehicle that can carry high objects that are higher than the top of the vehicle. The fact that there is no access to the sides of the cargo bed is a severe handicap as cargo cannot be loaded into the cargo bed except from the aft end.

The instant invention solves the shortcomings of all of the prior art types in that it offers a full cab height waterproof unit that is retractable so that the cargo bed is open to both the top and sides, in other words fully open, over most of this length. This provides a pickup type look and easy access to the open cargo bed when retracted. When extended, it provides a full cab height waterproof enclosure over the cargo bed. The instant invention is applicable as both an aftermarket product to pickup trucks and the like but also to new pickup truck, SUV, and similar factory designs.

#### SUMMARY OF THE INVENTION

A primary object of the instant invention is to offer an improved cargo bed cover for cargo beds of vehicles where said cargo bed cover is of substantially a height of a cab of the vehicle and is disposed, at least primarily, aft of a cab of the vehicle and retractable to thereby render said cargo bed open over at least a portion of its length.

It is a related object of the invention it may be applied as an aftermarket product to pickup trucks and the like.

It is a further object of the invention that it may be integrated into the design of a vehicle initially so that it is a factory offered integral part of the vehicle.

It is a directly related object of the invention that it may be applied to new pickup trucks, Sport Utility Vehicles, or other vehicle types.

It is yet another object of the invention that it may be applied to other vehicles than land vehicles including boats.

A further object of the invention is that retraction of the cargo bed cover may render said cargo bed open over at least thirty percent of its length.

Another object of the invention is that retraction of the cargo bed cover may render said cargo bed open over at least forty percent of its length.

Still another object of the invention is that retraction of the cargo bed cover may render said cargo bed open over at least fifty percent of its length.

Yet another object of the invention is that retraction of the cargo bed cover may render said cargo bed open over at least sixty percent of its length.

Still one more object of the invention is that retraction of the cargo bed cover may render said cargo bed open over at least seventy percent of its length.

A further object of the invention is that the cargo bed cover may be comprised of two or more cargo bed cover elements.

Yet another object of the invention is that the cargo bed cover may be comprised of three cargo bed cover elements.

A further object of the invention is that said cargo bed cover may be comprised of four cargo bed cover elements.

One of the preferred embodiments of the invention is that a first cargo bed cover element of the cargo bed cover may be fixedly attached to the vehicle.

A directly related object of the invention is that said first cargo bed cover element of the cargo bed cover may be enclosed on its forward end and its sides.

A primary object of the invention is that one or more of cargo bed cover elements of the cargo bed cover may slide aft to effect a covered closure over the cargo bed.

A directly related object of the invention is that one or more of cargo bed cover elements of the cargo bed cover slide forward to effect an open aft end of the cargo bed.

A further object of the invention is that, when extended aft, said cargo bed cover is lockable to a tailgate of a pickup truck.

Yet another object of the invention is that it include a stoplight affixed proximal an aft end of a first cargo bed cover element.

A similar object of the invention is that it include a stoplight affixed proximal an aft portion of a rearmost cargo bed cover element as seen with the cargo bed cover extended rearward.

Another object of the invention is that elements of said cargo bed cover slide in tracks disposed either side of the cargo bed.

A directly related object of the invention is that the tracks include rolling elements such as ball or roller bearings.

A further directly related object of the invention is that the rolling elements may be rolling wheels or the like.

Yet another object of the invention is that elements of said cargo bed cover may have upward turning seal portions to prevent water from entering the cargo bed when said elements are extended to cover the cargo bed.

A directly related object of the invention is that the seal portions disposed between elements of said cargo bed cover may include a seal element that may be compressed.

A further object of the invention is that there may be windows that retract into forward and/or aft tailgate members.

It yet another object of the invention that there may be side windows in one or more of the retractable bed cover elements.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 presents a rear quarter perspective view of a vehicle, in this case a pickup truck, with the instant invention retractable cargo bed cover retracted in its forward position to thereby leave the aft portion of its cargo bed open. The important feature here is that the retractable cargo bed cover is at substantially the same height as the cab of the pickup truck. It is also important to note that the forward element of the retractable cover is affixed in this case. Also, that forward element may be simply a part of the cab of the vehicle which may be preferred in a new vehicle design.

Figure 2 is the same perspective view as presented in Figure 1 but showing elements of the retractable cargo bed as they are being extended aft.

Figure 3 presents a perspective view as Figures 1 and 2 but with the retractable cover elements extended aft so that they enclose the entire bed of the pickup truck here. Note that the brake light, while shown mounted on the forward affixed element here, may

be affixed to the aft retractable element. This latter approach gives best view of the stop light when the retractable bed cover is extended aft.

Figure 4 presents a partial view of the instant invention as taken through a vertical centerline plane of the vehicle presented in Figure 1. This is with the instant invention bed cover retracted forward. Note the windows in the first affixed element and the fold down portion of the aft retractable element.

Figure 5 gives a partial view taken through a vertical centerline plane of Figure 3. This is with the instant invention retractable cab height bed cover extended all the way aft. Note that the rear window portion extended down and locked against a tailgate of a pickup truck in this illustration.

Figure 6 presents a partial cross-section, as taken through line 6-6 of Figure 4 that shows a preferred embodiment of working sections of side mounts. In this case the retractable elements are mounted on ball bearings to make movement easy. The outer element shown as fixed represents a first fixed in place element. While the first or forward element is shown as fixed in figures presented in this application it is to be realized that it may move fore and aft also if such presents a desirable option.

Figure 7 gives an enlarged view of how the elements of the cover may seal out water from entering. In this example, there is a sealing lip on each part with a compression seal between them. Various other approaches to sealing are within the scope of the instant invention.

Figure 6 presents a vehicle, such as a Sport Utility Vehicle (SUV) and pickup truck, that has the instant invention retractable full height cover built into the original design. In this case the full height cover is retracted. It is to be noted that the instant

invention retractable cover does not have to be full cab height; however, the full cab height is certainly the preferred embodiment of the invention.

Figure 9 presents the same vehicle as that presented in Figure 8 but in this case the instant invention retractable cover is partially extended over the back end of the vehicle.

Figure 10 shows the vehicle with the retractable cover fully extended. Note the optional side windows here that makes for a vehicle that can have seating or other passenger accommodations in the area under the extended retractable cover.

Figure 11 gives a partial centerline cross-sectional view, as taken through the vertical centerline plane of Figure 1, that has the retractable cover fully retracted. For purposes of illustration, the aft tailgate is shown down here. The forward tailgate or aft gate of the passenger or cab portion of the vehicle is shown up with its preferred internal window up to seal the passenger cab area here. Note that it is possible to have the forward tailgate down with its window retracted which gives a very long cargo bed.

Figure 12 presents a partial centerline cross-sectional view, as taken through the vertical centerline plane of Figure 3, that has the retractable cover fully extended. Note that the forward tailgate is down and actually part of the bed floor here. This arrangement makes for a very long passenger compartment and/or cargo bed.

#### DETAILED DESCRIPTION

Figure 1 presents a rear quarter perspective view of a vehicle 30, in this case of a pickup truck, that shows the instant invention retractable cab height vehicle cargo bed cover 31. A forward element 32, in this example fixed in position, and retractable elements 33, 34 are shown in their retracted position to thereby give a maximum open



cargo bed opening. The cargo bed 44, pickup tailgate 36, cargo bed side 42, and brake light 38 are also shown.

Figure 2 shows the same perspective view as does Figure 1 but with retractable elements 33, 34 shown as they are being moved aft.

Figure 3 presents the same view as does Figures 1 and 2 but with the retractable bed cover elements 33, 34 extended all way aft to thereby cover the entire cargo bed. Note the rear window element 36 that is folded down and locked to the tailgate 36 in this case.

Figure 4 presents a partial cross sectional view, as taken through a vertical centerline plane of the vehicle 30 given in Figure 1, that shows positioning of the various elements when the instant invention retractable cab height bed cover 31 is retracted forward. Note that the rear hinged portion 36 is retracted upward here so that full size and height items may be placed all the way to the aft end of the cargo bed 44. Note also the rear window 45 that allows full view aft by a driver of the vehicle.

Figure 5 shows a partial cross sectional view, as taken through a vertical centerline plane of the vehicle 30 that is shown in Figure 3. This shows all of the retractable bed cover elements 33, 34 extended all the way aft to thereby cover the full cargo bed 44. Other items shown include side mounts 39 that are mounted on cargo bed sides 42, and compression seal elements 40.

Figure 6 presents a partial cross sectional view, as taken through line 6-6 of Figure 4, that shows a preferred embodiment slide mount 39 that includes rolling elements 41, and bed cover retractable element mount adapters 43. Note that other means

of reducing friction than the ball bearings shown may be used. Also, roller bearing elements may be used to replace the ball bearings 40.

Figure 7 is an enlarged view that shows how a typical means of sealing between retractable bed cover elements may be accomplished. Note the downward extending lip on element 33 and the upward extending lip on the more rearward element 34. A compression seal 40 such as might be made from sponge rubber is shown.

From a construction standpoint, the retractable bed cover elements 33, 34 would best be constructed using a composite construction. As an example, while not shown, this might utilize a fiberglass or other composite outer layer, a foam core, and a fiberglass or other composite inner layer. Other materials such as structural foam, while very expensive from a tooling standpoint, may also be utilized.

Figure 8 presents a slight variation of the instant invention whereby it is built into a vehicle 30 as it comes from the factory. The full height cover 31 is retracted to provide a fully open bed 44 here. In this case there is an aft tailgate 36 that preferably includes a stoplight 38. The instant invention retractable full height cover 31 is included as an open part of the vehicle's cab or passenger compartment 37.

Figure 9 shows the same vehicle 30 as presented in Figure 8 but in this case the retractable covers 33, 34 are being extended aft.

Figure 10 presents the same vehicle 30 as given in Figures 8 and 9 but with the retractable elements 33, 34 extended fully aft. Note that a rear window 47 moves up from inside the aft tailgate 36 here. Having the rear window 47 retract into and extend upward from the aft tailgate 36 is a preferred embodiment of the instant invention as that precludes having to have a fold up window as used in the examples of Figures 4 and 5.

Further, an alternative embodiment of the instant invention has windows 49, 50 in moveable elements 33, 34 and window 48 that basically lines up with windows 49, 50 when elements 33, 34 are retracted.

Figure 10 presents a partial centerline cross-sectional view, as taken through the vertical centerline plane of Figure 8, that shows retractable elements 33, 34 in their retracted positions. Note the forward tailgate or door 51 that is up in this case with its preferred window 45 up so that the cab or passenger area 37 is sealed at its aft end. In this case, for purposes of illustration, the aft tailgate 36 is open with its window 47 withdrawn. Note that a stoplight 38 is attached to the aft tailgate 36 in this preferred embodiment showing its location.

Figure 11 is a partial centerline cross-sectional view, as taken through the vertical centerline plane of Figure 10, that shows retractable elements 33, 34 extended. The aft tailgate 36 is up and its window 47 is extended here. Also the forward tailgate 51 is down and rotated aft here to make for a very long and useful cargo and/or passenger area. Note that the forward tailgate 51 is, when rotated forward, down inside of a tailgate recess 52 which offers a preferred variation to the instant invention. The advantage of having this tailgate recess 52 is that a flat floor all the way to the back of the driver's seat is possible.

While the invention has been described in connection with a preferred and several alternative embodiments, it will be understood that there is no intention to thereby limit the invention. On the contrary, there is intended to be covered all alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims, which are the sole definition of the invention.